

REMARKS

Claim Rejections

Claim 6 is rejected under 35 U.S.C. § 112, second paragraph. Claims 1-5, 7, 8, 10, 12, 14, 15, 17 and 18 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hayashi et al. (U.S. Patent No. 5,874,696). Claims 9, 13, 16, and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayashi et al. Claims 11 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayashi et al. in view of Merkel (U.S. Patent No. 6,137,676).

Drawings

It is noted that the Examiner has accepted the drawings as originally filed.

Claim Amendments

By this Amendment, Applicant has canceled claims 5, 6, 9, 12 and 16, and amended claims 1-4, 7-8, 10-11, 13-15 and 17-20 in this application. Claim 6 has been canceled thereby obviating the outstanding rejection under 35 U.S.C. § 112. Claims 11 and 19 have been amended to overcome the objections set forth in the outstanding Office Action. It is believed that the amended claims specifically set forth each element of Applicant's invention in full compliance with 35 U.S.C. § 112, and define subject matter that is patentably distinguishable over the cited prior art, taken individually or in combination.

The primary reference to Hayashi et al. discloses a key switch having a key top (125), key links (531) each having respective gears (531a) link having a shaft (524a), and a hook (523b). Gears of the two links are engaged with each other, and the links pivot about projections (124).

Hayashi et al. states, at column 11, lines 57-61 that:

On the other hand, when the aforesaid cover 51b comes into the closed state, the slide plate 523 shifts in an arrow J₂ direction, and the hook 523b pulls the shaft 524a of the one link 531 in the arrow J₂ direction whereupon, the key top 539 drops.

Hayashi et al. teaches lowering the key top by pulling the shaft on the link with the hook, but does not teach a guiding block pressing upon the second connection rod to make the key-top-lid move downward relative to the base. Further, as noted by the Examiner, on page 5 of the outstanding Office Action, Hayashi et al. fails to disclose, "the guiding board having at least two stop-blocks for confining movement on the guiding board in a horizontal direction relative to the base."

A major difference exists between cited reference to Hayashi et al. and the present invention. As shown in Fig. 2, Fig. 6A and Fig. 6B of Hayashi et al., the slide plate 523 shifts in a J_2 direction, and the hook 523b pulls the shaft 524b of the one link 531 in the arrow J_2 direction whereupon, the key top 539 drops to satisfy the customer's requirements for the size reduction. Instead, the present invention accomplishes the foregoing object by depressing the middle section of the second connection rod 122 between the second upper end 1221 and the second lower end 1222 using the guiding block 141. In the cited reference, during the process of size reduction, more pulling force is needed along with the deformation of the rubber actuator 122.

As shown in Fig. 3, Fig. 4A and Fig. 4B of the present invention, the upper lid 1411 (parallel to the guiding board 14) of the guiding block 141 is moved horizontally and contacts gradually with the second rod 122. Because the upper lid 1411 completely transfers a horizontal action force of the horizontal motion, after contacting with the second connection rod 122, the upper lid 144 then presses down the second connection rod 122. The second lower end 1222 of the second connection rod 122 and the leg-base 104 extended from the base 10 form a turning, pivoting joint match. The second end 1222 becomes a rotational axis and makes the second connection rod 122 rotating around the rotational axis and approaching the base 10. The second upper end 1221 of the second connection rod 122 and the second flange 1102 extended from the key-top-lid 11 form a rotational gliding, rotating match. After the interaction with the second flange 1102, the second upper end 1221 then moves the key-top-lid 11 and makes the key-top-lid lowering down relatively to the base 10.

Because the guiding block 141 applies a force on the second connection rod 122 with a horizontal motion, when the second connection rod 122 more approaches to the horizontal direction, the horizontal component force of the horizontal applying force forwarded by the upper lid 1411 can make the second connection rod 122 absorbing more the horizontal component force, and reach the function of accomplishment of the horizontal movement and press with small force applied by the guiding board 14.

It is axiomatic in U.S. patent law that, in order for a reference to anticipate a claimed structure, it must clearly disclose each and every feature of the claimed structure. Applicant submits that it is abundantly clear, as discussed above, that Hayashi et al. does not disclose each and every feature of Applicant's amended claims and, therefore, could not possibly anticipate these claims under 35 U.S.C. §102. Absent a specific showing of these features, Hayashi et al. can not be said to anticipate Applicant's claims 1-4, 7-8, 10, 14-15 and 17-18 under 35 U.S.C. §102.

It is further submitted that Hayashi et al. does not disclose, or suggest a modification of its specifically disclosed structure that would lead one having ordinary skill in the art to arrive at Applicant's claimed structure. Thus, it is not believed that Hayashi et al. renders obvious Applicant's amended claims 13 or 20 under 35 U.S.C. § 103.

The secondary reference to Merkel discloses a collapsible keyboard mechanism having a block portion (70), a dome sheet (52), a linkage plate (66), a display structure (62), and a spring (68). The display portion being pivotally connected at opposing ends to the block portion and the linkage plate, and the linkage plate pivotally connected at opposing ends to the display structure and the dome sheet.

Merkel states, at column 5, lines 66 through column 6, line 3, that:

The springs 68 are vertically oriented and bear at their opposite ends on the top side of the monoblock structure 38 and the undersides of opposite upper corner portions of the pivotally interconnected LCD status display structure 62 and the linking plate 66.

Merkel teaches the spring being connected by a pivotal connection between the display structure and the linking plate, but does not teach the elastic element as installed between the second support frame and the base. Further, Merkel teaches the dome sheet disengaging domes (54) from the scissor arm linkages (48) and collapsing the keys (40) as the dome sheet shifts horizontally, but does not teach that, when a force is applied on the operation part by a user, the guiding board is moved from the second position to the first position, the guiding block presses upon the second connection rod and moves the key-top-lid downward relative to the base, as in Applicant's claims.

Even if the teachings of Hayashi et al. and Merkel were combined, as suggested by the Examiner, the resultant combination does not suggest: 1) when the guide block is moved from the second position toward the first position, the guide block presses upon the second connection rod and moves the key-top-lid downward relative to the base; nor does the combination teach 2) the elastic element is installed between the second support frame and the base.

Neither Hayashi et al., nor Merkel disclose, or suggest a modification of their specific disclosed structures that would lead one having ordinary skill in the art to arrive at Applicant's claimed structure. Applicant hereby respectfully submits that no combination of the cited prior art renders obvious the amended claims 11 and 19.


Summary

In view of the foregoing amendments and remarks, Applicant submits that this application is now in condition for allowance and such action is respectfully requested. Should any points remain in issue, which the Examiner feels could best be resolved by either a personal or a telephone interview, it is urged that Applicant's local attorney be contacted at the exchange listed below.

Respectfully submitted,

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